April 04, 2018

U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 11536
(NINETEENTH REVISION)

EXPIRATION DATE: 2022-01-31

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: The Boeing Company
Los Angeles, CA

2. PURPOSE AND LIMITATION:

a. This special permit authorizes the transportation in commerce of certain hazardous materials in non-DOT specification packagings (spacecraft) and limited quantities of Division 1.4S and 1.4C explosives secured within the spacecraft. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.

b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.

c. No party status will be granted to this special permit.

d. This special permit serves as an approval under Special Provision A99 and A88 of the ICAO TI and as a "Competent Authority Approval" as defined under 49 CFR § 107.1.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

Tracking Number: 2018029276

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 172.101 Column (9B) in that anhydrous ammonia is authorized for transport aboard cargo-only aircraft and lithium batteries may exceed 35 kg net weight; 172.102(c) Special Provision 101 in that naming the specific substance not required; § 173.24(g) in that the venting requirements are waived; 173.185(a) in that batteries need not be of a type testing in accordance with 38.3 of the UN Manual of Tests and Criteria; 173.62, 173.185(b), 173.202, 173.211, 173.302(a) and 173.304(a) in that a non-DOT specification packaging is authorized as specified herein; and Chapter 4.1 Section 4.1.3.7 and Chapter 7.9 Section 7.9.2 of the International Maritime Dangerous Goods (IMDG) Code in that a lithium ion battery whose net mass exceeds 400 kg is authorized.

5. BASIS: This special permit is based on the emergency renewal application of The Boeing Company dated February 1, 2018 and submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Ammonia, anhydrous	2.3	UN1005	Hazard Zone D
Ammonia, anhydrous	2.2	UN1005	Inhalation Hazard Zone D
Argon, compressed	2.2	UN1006	N/A
Articles, explosive, n.o.s. (Zirconium, Potassium perchlorate)	1.4C	UN0351	N/A
Articles, explosive, n.o.s. (Zirconium, Potassium perchlorate)	1.4S	UN0349	N/A
Cesium	4.3	UN1407	I

Hazardous Materials Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Helium, compressed	2.2	UN1046	N/A
Hydrogen, compressed	2.1	UN1049	N/A
Krypton, compressed	2.2	UN1056	N/A
Lithium ion batteries, contained in equipment*	9	UN3481	N/A
Nitrogen, Compressed	2.2	UN1066	N/A
Propylene	2.1	UN1077	N/A
Refrigerant gas, R 404A	2.2	UN3337	N/A
Rubidium	4.3	UN1423	I
Xenon, compressed	2.2	UN2036	N/A
Refrigerant gas, R 407C	2.2	UN3340	N/A

*Contains low production batteries ("Low production" is defined as a production run of no more than 100 cells or batteries annually of a particular type.)

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings are components of a spacecraft.

(1) Xenon gas and Helium gas must be packaged in carbon-filament wrapped aluminum or titanium cylinders complying with the applicable sections of MIL-STD-1522A (USAF) for pressurized systems, dated May 28, 1984, AIAA S-080 Space Systems - Metallic Pressure Vessels, Pressurized Structures, or Pressure Components, dated January 01, 1998, or AIAA S-081A Space Systems-Composite Overwrapped Pressure Vessels (COPVs), dated January 01, 2006.

(2) Anhydrous ammonia must be packaged in heat pipe/radiators. Pressure relief devices are not required.

(3) All spacecraft batteries must be either non-spillable in compliance with the requirements of 173.159(d) or lithium ion batteries described in CA2002100008 secured in the spacecraft.

(4) All explosives must be secured in the spacecraft EXCEPT for a single CBOD (Clamp Band Opening Device) containing not more than two (2) initators approved under EX2012050060 that is secured to the spacecraft's shipping frame to prevent movement during transportation and packaged as follows: Inner Packaging – bag, plastic containing one (1) CBOD (Clamp Band Opening Device) with shipping caps installed and electrically mated so as not to activate in transport. Outer packaging - UN4G fiberboard box with sufficient dunnage to prevent movement during transport.

(5) The spacecraft must be packaged in the "Belfast container" (7705995-12-200), the "Boeing shipping container /transporter" (8074389 and 8074389-88302 S/N 001 & S/N 002), the HS-376 shipping container (3566812), the 12-300 shipping container (7730520, 778970 and 7990150), the 5M Satellite Transport System (5M STS, Boeing PN 8074389-88303), or the Space Cargo Transportation System (SCTS) container (8517079) with continuous nitrogen or air flow as shown in the original application and the application for modification. Note: the nitrogen or air flow expelled from the shipping container during transit is not to be considered leakage of hazardous material.

(6) The cesium and rubidium are enclosed inside the Frequency Standard, which are installed as an integral part of the spacecraft. Each Frequency Standard will have less than 5 grams of material in a hermetically sealed tube.

(7) The requirements for venting under § 173.24(g) are waived. When nitrogen flow is used, precautions must be taken to prevent the creation of asphyxiating conditions in a closed space and only unpressurized cargo compartments may be used when shipping by air.

(8) Propylene may be used in the cooling system in lieu of anhydrous ammonia.

(9) Quantities of materials may not exceed that specified in the applications (including the modification application) on file.

(10) The maximum net weight and energy rating of the battery consisting of three battery packs within a container may be not more than 465 kg and 5608 Wh, respectively.

(11) The battery may be shipped at not more than a 10% State of Charge during transportation.

b. LITHIUM ION BATTERY TESTING - All cells must be of a type proven to meet the requirements in JSC 20793.

c. OPERATIONAL CONTROL MEASURES – Transportation by air shall be a dedicated cargo-only aircraft.

8. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, cargo vessel, cargo-only aircraft.

9. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a current copy of this special permit to the air carrier before or at the time the shipment is tendered.

10. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) – "The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

11. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:

for William Schoonover
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Andrew Eckenrode